

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. Please amend claims 1, 11, 21, 34, and 58, as follows:

Listing of Claims:

1. (Currently Amended) A computer implemented method for scheduling an order to a mobile service representative, the method comprising:

negotiating a reservation to perform an order for a customer against a schedule;

adding the reservation, wherein adding the reservation includes identifying a duration, a priority, a location, an appointment window, a mobile service representative, a bumping indicator, and an aggregation indicator for the reservation, the aggregation indicator having a first setting to enable aggregation of the reservation and having a second setting to disable aggregation of the reservation;

analyzing shifts of mobile service representatives to identify shifts that are suitable for the reservation;

sorting the identified shifts according to objective criteria;

booking the order to one of the shifts of mobile service representatives starting with the best shift and in descending order to the worst shift according to the objective criteria;

in response to the aggregation indicator having the first setting to enable aggregation of the reservation, aggregating reservations, including reservations other than reservations for not limited to a particular mobile service representative, and having enabled aggregation indicators in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set, and in response to the aggregation indicator having the second setting to disable aggregation of the reservation, not aggregating reservations having the same value for the information defined by the aggregation parameter set;
and

optimizing periodically the shift of the mobile service representative.

2. (Original) The method of claim 1, further comprising configuring a constraint set, wherein the act of configuring allows a user to modify the constraint set so as to control the way in which orders are assigned to a mobile service representative.

3. (Original) The method of claim 1, wherein negotiating includes using a window over the schedule, wherein the window defines a set of shifts in the schedule that can be booked by the act of booking.

4. (Original) The method of claim 1, wherein negotiating includes negotiating an appointment window for the order so as to allow the mobile service representative to begin the performance of the order within the time frame of the appointment window.

5. (Original) The method of claim 1, further comprising bumping an order, which has a lower priority, for another order, which has a higher priority.

6. (Original) The method of claim 1, further comprising escalating the priority of an order over time when the order has not been performed by the mobile service representative.

7. (Original) The method of claim 1, further comprising splitting an order to a set of orders when the performance of the order requires a number of days to perform the order.

8. (Original) The method of claim 1, wherein optimizing includes optimizing a single shift of a mobile service representative so as to shorten travel time between orders booked in the single shift.

9. (Original) The method of claim 1, wherein optimizing includes optimizing at least one pair of shifts, wherein optimizing is selected from a group consisting of swapping orders between the at least one pair of shifts and reassigning orders between the at least one pair of shifts.

10. (Previously Presented) The method of claim 1, wherein booking includes booking the order to a shift of the mobile service representative if the mobile service representative has the set of skills and the set of equipment.

11. (Currently Amended) A computer readable medium having computer-executable instructions stored thereon for causing a computer to perform a method for scheduling by performing steps comprising:

negotiating a reservation to perform an order for a customer against a schedule;

adding the reservation, wherein adding the reservation includes identifying a duration, a priority, a location, an appointment window, a mobile service representative, a bumping indicator, and an aggregation indicator for the reservation, the aggregation indicator having a first setting to enable aggregation of the reservation and having a second setting to disable aggregation of the reservation;

analyzing shifts of mobile service representatives to identify shifts that are suitable for the reservation;

sorting the identified shifts according to objective criteria;

booking the order to one of the shifts of mobile service representatives starting with the best shift and in descending order to the worst shift according to the objective criteria;

in response to the aggregation indicator having the first setting to enable aggregation of the reservation, aggregating reservations, including reservations other than reservations for not limited to a particular mobile service representative, and having enabled aggregation indicators in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set, and in response to the aggregation indicator having the second setting to disable aggregation of the reservation, not aggregating reservations having the same value for the information defined by the aggregation parameter set;
and

optimizing periodically the shift of the mobile service representative.

12. (Original) The method of claim 11, further comprising configuring a constraint set, wherein the act of configuring allows a user to modify the constraint set so as to control the way in which orders are assigned to a mobile service representative.

13. (Original) The method of claim 11, wherein negotiating includes using a window over the schedule, wherein the window defines a set of shifts in the schedule that can be booked by the act of booking.

14. (Original) The method of claim 11, wherein negotiating includes negotiating an appointment window for the order so as to allow the mobile service representative to begin the performance of the order within the time frame of the appointment window.

15. (Original) The method of claim 11, further comprising bumping an order, which has a lower priority, for another order, which has a higher priority.

16. (Previously presented) The method of claim 11, further comprising escalating the priority of an order over time when the order has not been performed by the mobile service representative.

17. (Original) The method of claim 11, further comprising splitting an order to a set of orders when the performance of the order requires a number of days to perform the order.

18. (Original) The method of claim 11, wherein optimizing includes optimizing a single shift of a mobile service representative so as to shorten travel time between orders booked in the single shift.

19. (Original) The method of claim 11, wherein optimizing includes optimizing at least one pair of shifts, wherein optimizing is selected from a group consisting of swapping orders between the at least one pair of shifts and reassigning orders between the at least one pair of shifts.

20. (Previously presented) The method of claim 11, wherein booking includes booking the order to a shift of the mobile service representative if the mobile service representative has the set of skills and the set of equipment.

21. (Currently Amended) A computer-implemented scheduling system for a dispatching environment having a scheduling engine for scheduling mobile service representative, the scheduling engine comprising:

an negotiator operable to negotiate an appointment window to perform an order, the order defined by a data structure that includes at least one of an appointment window, a duration, a priority, a location, and a set of skills required to carry out the order, and further includes at least one of a bumping indicator and an aggregation indicator, the aggregation indicator having a first setting to enable aggregation of the reservation and having a second setting to disable aggregation of the reservation, the data structure residing on a computer media;

an assignment filter configured to analyze shifts of mobile service representatives to identify shifts that are suitable for the reservation and further configured to sort the identified shifts according to objective criteria;

an assigner operable to assign the order to a shift of a mobile service representative starting with the best shift and in descending order to the worst shift according to the objective criteria;

an aggregator component operable to aggregate reservations not limited to a particular mobile service representative and having enabled aggregation indicators in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set; and

an optimizer operable to optimize dynamically at least one shift so as to enhance the scheduling system in accordance with a predetermined set of business objectives.

22. (Original) The scheduling system of claim 21, wherein the order is defined by a data structure that includes an appointment window, a duration, a priority, a

location, and a set of skills required to carry out the order, and wherein the data structure resides on a computer media.

23. (Original) The scheduling system of claim 21, wherein the mobile service representative is defined by a data structure that includes a set of skills that the mobile service representative possesses and the equipment that the mobile service representative possesses, and wherein the data structure resides on a computer media.

24. (Original) The scheduling system of claim 21, wherein the shift is defined by a data structure that includes a shift start date and start time, a shift end date and end time, a set of break start dates and start time, a set of break end dates and end times, and a starting location and an ending location, and wherein the data structure resides on a computer media.

25. (Original) The scheduling system of claim 21, wherein the assigner accounts for the travel time of the mobile service representative and the break time of the mobile service representative in assigning the order to the shift of the mobile service representative.

26. (Original) The scheduling system of claim 21, wherein the appointment window includes an identifier, a start time, and an end time, and wherein the appointment window is visible to the negotiator.

27. (Original) The scheduling system of claim 21, wherein the order includes a predetermined level of priority, wherein the predetermined level of priority of the order determines whether the order will be bumped by another order having a higher level of priority.

28-30. (Cancelled)

31. (Original) The scheduling system of claim 21, further comprising a travel time component that calculates the travel time between the start of a shift to the first order assigned to the shift and the travel time between two orders, and the travel time between the last order assigned to the shift and the end of the shift.

32. (Previously Presented) The scheduling system of claim 21, wherein the optimizer includes an optimizing filter, wherein the optimizing filter finds a shift into which a reservation fits, with the purpose of better satisfying the optimization objectives.

33. (Original) The scheduling system of claim 21, wherein the optimizer includes an optimization objective component having a set of optimization objectives, wherein the optimization objective component determines the degree to which the set of optimization objectives are satisfied if the optimizer were to optimize a shift or a pair of shifts.

34. (Currently Amended) A computer implemented method for scheduling mobile service representatives, the method comprising:

negotiating an appointment window for booking a reservation;

adding the reservation, wherein adding the reservation includes identifying a duration, a priority, a location, an appointment window, a mobile service representative, a bumping indicator, and an aggregation indicator for the reservation, the aggregation indicator having a first setting to enable aggregation of the reservation and having a second setting to disable aggregation of the reservation;

analyzing shifts of mobile service representatives to identify shifts that are suitable for the reservation;

sorting the identified shifts from the most to least desirable shift based on objective criteria;

assigning the reservation to a shift of a mobile service representative starting with the most desirable shift and in descending order to the least desirable shift;

in response to the aggregation indicator having the first setting to enable aggregation of the reservation, aggregating reservations, including reservations other than reservations for not limited to a particular mobile service representative, and having enabled aggregation indicators in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set, and in response to the aggregation indicator having the second setting to disable aggregation of the reservation, not aggregating

reservations having the same value for the information defined by the aggregation parameter set;
and

optimizing periodically the shift of the mobile service representative while the acts of negotiating and assigning are executing.

35. (Original) The method of claim 34, further comprising adding a mobile service representative, wherein adding the mobile service representative includes identifying a working area of the mobile service representative, a set of skills of the mobile service representative, and a set of equipment types that is possessed by the mobile service representative.

36. (Original) The method of claim 34, further comprising adding a shift, wherein adding a shift includes identifying a mobile service representative to be associated with the shift, a start time, an end time, and a set of breaks.

37. (Cancelled)

38. (Original) The method of claim 34, further comprising finding a list of appointment windows for the act of negotiating.

39. (Original) The method of claim 34, further comprising assigning forcibly a reservation when the act of assigning the reservation has failed.

40. (Original) The method of claim 34, further comprising removing an assignment of a reservation.

41. (Original) The method of claim 34, further comprising canceling a reservation.

42. (Original) The method of claim 34, further comprising completing a reservation so as to inhibit the reservation from being bumped, aggregated, or moved to another shift.

43. (Original) The method of claim 34, further comprising reassigning a reservation.

44. (Original) The method of claim 34, further comprising reassigning forcibly a reservation.

45. (Original) The method of claim 34, further comprising assigning a bumped or a yanked reservation.

46. (Original) The method of claim 34, further comprising setting at least one property from a set of properties of a reservation.

47. (Original) The method of claim 34, further comprising modifying a mobile service representative.

48. (Original) The method of claim 34, further comprising deleting a mobile service representative.

49. (Original) The method of claim 34, further comprising modifying a shift.

50. (Original) The method of claim 34, further comprising modifying forcibly a shift.

51. (Original) The method of claim 34, further comprising deleting a shift.

52. (Original) The method of claim 34, further comprising deleting forcibly a shift.

53. (Original) The method of claim 34, further comprising notifying a subscriber when a reservation event occurs.

54. (Original) The method of claim 34, further comprising getting reservation assignment information.

55. (Original) The method of claim 34, further comprising getting shift assignment information.

56. (Original) The method of claim 34, further comprising getting mobile service representative assignment information.

57. (Original) The method of claim 34, further comprising confirming a reservation.

58. (Currently Amended) A computer readable medium having computer-executable instructions stored thereon for causing a computer to perform a method for scheduling mobile service representatives by performing steps comprising:

negotiating an appointment window for booking a reservation;

adding a reservation, wherein adding a reservation includes identifying a duration, a priority, a location, an appointment window, a mobile service representative, a bumping indicator, and an aggregation indicator, the aggregation indicator having a first setting to enable aggregation of the reservation and having a second setting to disable aggregation of the reservation;

identifying suitable shifts of mobile service representative to which the reservation can be booked;

sorting the identified shifts from the most desirable to the least desirable shift based on objective criteria;

assigning the reservation to a shift of a mobile service representative starting with the best shift and in descending order to the worst shift according to the objective criteria;

in response to the aggregation indicator having the first setting to enable aggregation of the reservation, aggregating reservations, including reservations other than reservations for not limited to a particular mobile service representative, and having enabled aggregation indicators and in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set, and in response to the second setting to disable aggregation of the reservation, not aggregating reservations having the same value for the information defined by the aggregation parameter set; and

optimizing periodically the shift of the mobile service representative while the acts of negotiating and assigning are executing.

59. (Original) The method of claim 58, further comprising adding a mobile service representative, wherein adding the mobile service representative includes identifying a working area of the mobile service representative, a set of skills of the mobile service representative, and a set of equipment types that is possessed by the mobile service representative.

60. (Original) The method of claim 58, further comprising adding a shift, wherein adding a shift includes identifying a mobile service representative to be associated with the shift, a start time, an end time, and a set of breaks.

61. (Cancelled)

62. (Original) The method of claim 58, further comprising finding a list of appointment windows for the act of negotiating.

63. (Original) The method of claim 58, further comprising assigning forcibly a reservation when the act of assigning the reservation has failed.

64. (Original) The method of claim 58, further comprising removing an assignment of a reservation.

65. (Original) The method of claim 58, further comprising canceling a reservation.

66. (Original) The method of claim 58, further comprising completing a reservation so as to inhibit the reservation from being bumped, aggregated, or moved to another shift.

67. (Original) The method of claim 58, further comprising reassigning a reservation.

68. (Original) The method of claim 58, further comprising reassigning forcibly a reservation.

69. (Original) The method of claim 58, further comprising assigning a bumped or a yanked reservation.

70. (Original) The method of claim 58, further comprising setting at least one property from a set of properties of a reservation.

71. (Original) The method of claim 58, further comprising modifying a mobile service representative.

72. (Original) The method of claim 58, further comprising deleting a mobile service representative.

73. (Original) The method of claim 58, further comprising modifying a shift.

74. (Original) The method of claim 58, further comprising modifying forcibly a shift.

75. (Original) The method of claim 58, further comprising deleting a shift.

76. (Original) The method of claim 58, further comprising deleting forcibly a shift.

77. (Original) The method of claim 58, further comprising notifying a subscriber when a reservation event occurs.

78. (Original) The method of claim 58, further comprising getting reservation assignment information.

79. (Original) The method of claim 58, further comprising getting shift assignment information.

80. (Original) The method of claim 58, further comprising getting mobile service representative assignment information.

81. (Original) The method of claim 58, further comprising confirming a reservation.